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Natural Resources Conservation Service

United States Department of Agriculture

√ashington Water Supply Outlook Report April 1, 2006



Water Supply Outlook Reports and Federal - State - Private

Cooperative Snow Surveys

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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Washington Water Supply Outlook

April 2006

General Outlook

For the most part Washington experienced below average precipitation for the month of March. The good news is that temperatures remained near normal, preventing premature snowmelt. What mountain precipitation we did get came in the form of snow, so much in places that it actually buried several snow depth measuring sensors and plugged or capped numerous precipitation gages. Monthly streamflow totals were very low due to the lack of precipitation which also forced down many of the streamflow forecasts in the state. Fortunately all streams are still expected to have near to above average flows this summer. Many reservoir operators are gearing up for summer by lowering lake levels to accommodate snowmelt runoff. The Climate Prediction Center is indicating a good chance of seeing below average temperatures for the next 90 days. However, do to week signals, climate models can not pin down a strong precipitation forecast.

Snowpack

The April 1 statewide SNOTEL readings were 122% of average, compared to 31% in 2005. The Similkameen River Basin snow surveys reported the lowest readings at 84% of average. Readings in the Toats Coulee area (near Loomis, WA) reported the highest at 243% of average. Western Washington April 1 snow surveys showed snowpack to average 188% of normal, compared to last year at only 33%. Snowpack in Eastern Washington reported an equally dramatic difference between this year and last year with 112% of normal currently on the ground, compared to 38% in 2005. Maximum snow cover in Washington was at Paradise SNOTEL on Mt. Rainer, with a water content of 77.9 inches. This site would normally have 71.9 inches of water content on April 1. Last year at this time Paradise had only 33 inches of snow water.

BASIN	PERCENT	OF LAST YEAR	PERCENT	OF AVERAGE
Con a la con a		025		0.0
Spokane				
Newman Lake				
Pend Oreille				
Okanogan				
Methow				116
Conconully Lake		614		167
Wenatchee		386		112
Chelan		252		106
Upper Yakima		478		118
Lower Yakima		337	. .	114
Ahtanum Creek		429		139
Walla Walla		358		105
Lower Snake		213		101
Cowlitz		328	. .	111
Lewis		746	. .	158
White		255	. .	106
Green		749		116
Puyallup		275		106
Cedar				142
Snoqualmie		474		127
Skykomish				
Skagit				
Baker				116
Nooksack				
Olympic Peninsula				
				_ 0 /

Precipitation

During the month of March, the National Weather Service and Natural Resources Conservation Service climate stations reported a wide variation in precipitation totals throughout Washington river basins. All but 3 basins reported below average precipitation with a high of 129% of average in the Okanogan-Methow Basin to a low of 56% in the White-Green-Puyallup Basin. The highest individual station percent of average in the state was at Moses Mtn. SNOTEL which reported 172% of average. The wettest spot in the state was reported at June Lake SNOTEL with a March accumulation of 16 inches, over 3 inches below the March normal of 19.36 inches. Overall water-year averages held steady or dropped slightly.

RIVER	MA	RCH	WATER YEAR					
BASIN	PERCENT	OF AVERAGE	PERCENT OF AVERAGE					
Spokane								
Colville-Pend Oreille		89	105					
Okanogan-Methow		129						
Wenatchee-Chelan		93						
Upper Yakima		64	98					
Lower Yakima		71	113					
Walla Walla		89						
Lower Snake		111						
Cowlitz-Lewis								
White-Green-Puyallup		56						
Central Puget Sound			102					
North Puget Sound								
Olympic Peninsula								

Reservoir

Seasonal reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation, municipal demands and flood control. Reservoir storage in the Yakima Basin was 284,000-acre feet, 51% of average for the Upper Reaches and 151,000-acre feet, 100% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 72% of average for April 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 133,000 acre feet, 78% of average and 56% of capacity; Chelan Lake, 138,000-acre feet, 64% of average and 20% of capacity; and the Skagit River reservoirs at 69% of average and 34% of capacity.

BASIN	PERCENT OF C	APACITY	CURRENT STORAGE AS PERCENT OF AVERAGE
Spokane	e	55	

Streamflow

April forecasts vary from 130% of average for Stemilt Creek near Wenatchee to 89% of average for the Methow River. In contrast; last year at this time the highest forecast in the state was 88% of average for the Columbia at Birchbank and the lowest was 27% of average for Chamokane Creek near Long Lake. Forecasts in most basins didn't exceed 80% where this year we have very few below 100%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS.

Statewide March streamflows were below average across the state due to the lack of precipitation and cool temperatures. The Cle Elum below Roslyn had the lowest reported flows with 39% of average. The Priest River with 88% of average was the highest in the state. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Cowlitz at Castle Rock, 66%; the Okanogan near Tonasket, 75%; the Columbia below Rock Island Dam, 79%; and the Yakima near Cle Elum, 43%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
Spokane Colville-Pend Oreille Okanogan-Methow Wenatchee-Chelan Upper Yakima Lower Yakima Walla Walla Lower Snake Cowlitz-Lewis White-Green-Puyallup Central Puget Sound North Puget Sound Olympic Peninsula	94-120 89-118 91-130 109-118 108-120 110-111 103-117 100-120 108 107-115 99-105
STREAM	PERCENT OF AVERAGE MARCH STREAMFLOWS
Pend Oreille Below Box Canyon Kettle at Laurier Columbia at Birchbank Spokane at Long Lake Similkameen at Nighthawk Okanogan at Tonasket Methow at Pateros Chelan at Chelan Wenatchee at Pashastin Yakima at Cle Elum Yakima at Parker Naches at Naches Grande Ronde at Troy Snake below Lower Granite Dam SF Walla Walla near Milton Freewa Columbia River at The Dalles Lewis at Ariel Cowlitz below Mayfield Dam Skagit at Concrete Dungeness near Sequim	59 86 81 54 75 60 65 50 43 50 49 67 87 ater 88 84 62 58 57

For more information contact your local Natural Resources Conservation Service office.

B A S I N S U M M A R Y O F S N O W C O U R S E D A T A

APRIL 2006

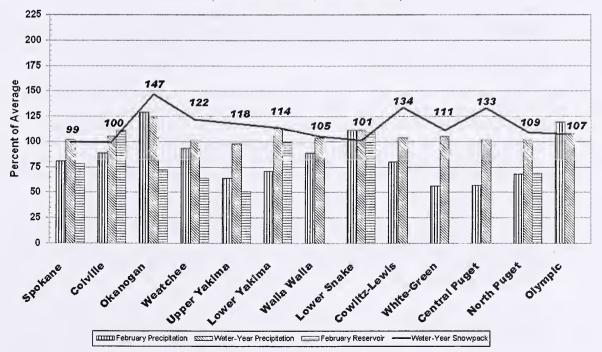
SNOW COURSE E	LEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
AHTANUM R.S.	3100	3/24/06	22	8.0		5.3	FROHNER MDWS SNO	TEL 6480	4/01/06	26	7.5	7,2	8.0
ALPINE MEADOWS	3500	4/01/06		56.9e	13.2	42.3	PROST MEADOWS	4630	3/29/06	62	22.3	4.5	
ALPINE MEADOWS SNTL	3500	4/01/06		61.1	18.7	43.6	GOAT CREEK	3600	3/28/06		8.2	1.0	3.6
AMBROSE ASHLEY DIVIDE	6480 4820	3/29/06 4/04/06	35 13	10.0 4.2	4.9 1.9	12.4	GOLD CREEK LAKE GOLD MTN LOOKOUT	7200	3/26/06		19.8	8.3	14.7
BADGER PASS	6900	3/27/06	93	40.7	22.1		GRASS MOUNTAIN #		3/30/06 3/20/06		15.9 14.0	2.8	10.0
BADGER PASS SNOTEL	6900	4/01/06	77	33.3	19.4	35.3	GRAVE CREEK	4300	3/28/06		16.7	8.5	10.0
BAIRD #2	3220	3/30/06	26	8.4	4.6		GRAVE CRK SNOTEL	4300	4/01/06		16.8	8.9	15.6
BAREE CREEK	5500	3/30/06	89	33.3	20.8	43.1		OTEL 6000	4/01/06		32.6	9.8	23.0 /
BAREE MIDWAY	4600 3800	3/30/06	86 37	33.4 11.8	14.4	33.0		CAN. 4700	3/29/06		9.6	7.8	9.2
BAREE TRAIL BARKER LAKES SNOTEL	8250	3/30/06 4/01/06	57	14.4	2.6 10.5	7.7 14.6	GRIFFIN CR DIVIDE GROUSE CAMP SNO	E 5150 OTEL 5380	3/29/06 4/01/06		10.7 28.6	3.4 7.4	10.3 19.8
BARNES CREEK CAN.	5320	3/26/06	49	16.5		20.4	GUNSIGHT LAKE	6300	3/25/06		36.4	22.0	39.3
BASIN CREEK SNOTEL	7180	4/01/06	32	8.6	5.2	8.7		CAN. 4550	4/02/06		9.5	3.3	14.0
BASSOO PEAK	5150	3/29/06	31	10.3	3.6	9.7	HAND CREEK	5030	3/27/06		11.6	3.2	"
BEAVER CREEK TRAIL	2200	4/03/06	31	12.1	.0	11.7	HAND CREEK SNOTE		4/01/06		12.1	2.8	11.7
BEAVER PASS BEAVER PASS SNOTEL	3680 3680	4/02/06 4/01/06	82 92	22.6 44.8	4.4 16.6	28.8	HARTS PASS SNO HARTS PASS	OTEL 6500 6500	4/01/06 4/03/06		44.2 47.0	16.9	46.3
BERNE-MILL CREEK	3170	3/29/06	85	30.8	8.2	28.1	HEART LAKE TRAIL	4800	3/28/06		18.7	20.1 11.7	42.0 20.6
BIG WHITE MTN CAN.		3/29/06	59	21.3	17.2	20.0	HELL ROARING DIV		3/29/06		33.1	18.4	29.5
BLACK MOUNTAIN	7750	3/28/06	49	14.5	10.0	14.6	HERRIG JUNCTION	4850	3/29/06		26.3	15.9	26.0
BLACK PINE SNOTEL	7100	4/01/06	36	11.6	7.3	12.5		OTEL 4920	4/01/06	72	27.5	7.3	23.1
BLACKWALL PEAK CAN.	6370	4/01/06	47	28.9		35.1	BOLBROOK	4530	3/31/06		6.8	.0	8.2
BLEWETT PASS #2 BLEWETT PASS#2SNOTEL	4270 4270	3/28/06 4/01/06	47 43	18.5 16.1	2.7	14.7	BOODOO BASIN SNOT		4/01/06	118 0	46.6	26.1	45.3
BLUE LAKE	5900	3/27/06	59	20.6	2.0 14.6	16.4 23.7	HUCKLEBERRY SNO HUMBOLDT GLCH SNO		4/01/06 4/01/06		.0 9.7	.0 2.4	11.2
BRENDA MINE CAN.	4450	4/01/06		15.6		12.5	HURRICANE	4500	4/01/06		16.5E	3.1	19.1
BRIEF	1600	3/30/06	0	. 0	.0	2.5	INTERGAARD	6450	3/26/06	21	6.3	2.3	7.7
BROOKMERE CAN.	3000	3/30/06	27	7.8	2.0	7.9	IRENE'S CAMP	5530	3/27/06	50	14.7	4.1	
BROWN TOP AM	6000	4/02/06	161	68.2	27.0	60.8		AN. 5100	3/30/06	25	6.8	2.8	7.2
BROWNS PASS	5000	3/28/06 3/28/06	22	6.5 7.8				TEL 3200	4/01/06		63.2	6.8	35.7
BRUSB CREEK TIMBER BULL MOUNTAIN	5000 6600	3/28/06	24 21	6.0	2.0 1.9	8.1 5.9	KELLER RIDGE KELLOGG PEAK	3700 5560	3/31/06 3/29/06	20 76	6.0 30.8	.0	29.2
BUMPING LAKE (NEW)	3400	3/30/06	59	19.7	1.7	17.6	KISHENEHN	3890	4/01/06		7.5E	2.1	6.8
BUMPING RIDGE SNOTEL	4600	4/01/06	94	36.6	5.4	28.6	KIT CARSON PASTUR	RE 4950	3/28/06	21	6.9	2.0	8.1
BUNCHGRASS MDWSNOTEL	5000	4/01/06	94	34.5	18.8	30.2	KLESILKWA C	CAN. 3450	3/27/06	30	10.7	.7	11.5
BURNT MOUNTAIN PIL	4200	4/01/06	48	19.9	2.1		KRAFT CREEK SNOTE	3L 4750	4/01/06	29	10.3	1.9	14.1
BUTTE CREEK #2	F2F0	3/28/06	31	9.6			LAMB BUTTE	21.00	3/31/06	52	19.3	5.2	21.4
BUTTERMILK BUTTE CAMP MISERY	5250 6400	3/31/06 3/27/06	60 130	19.5 53.9	6.7 30.8	49.3	LESTER CREEK LIGHTNING LAKE (3100 CAN. 3700	3/20/06 3/31/06	70 38	28.1 13.3	.9 2.4	21.4 12.0
CARMI CAN.	4100	3/31/06	19	5.8	2.5	5.6	LOGAN CREEK	4300	3/28/06	25	7.2	4.0	6.7
CAYUSE PASS	5300	3/26/06	221	73.4	35.2	79.8		TEL 5240	4/01/06	84	32.3	15.4	30.3
CEDAR GROVE	3760	3/27/06	37	11.4	5.8	11.4		TEL 3800	4/01/06		52.3	9.6	36.4
CHESSMAN RESERVOIR	6200	3/30/06	4	1.3	2.1	3.5		OTEL 5140	4/01/06	76	30.0	15.0	31.8
CHEWALAH #2 CHICKEN CREEK	4930 4060	3/29/06	76	27.5 18.5	8.1	15.2	LOST BORSE MIN C	5940 CAN. 6300	3/30/06 4/02/06	81 35	27.8 10.2	15.4 5.4	30.7 9.4
CHICKEN CREEK CHIWAUKUM G.S.	2500	3/29/06 3/29/06	49 30	9.2	8.6 1.8	9.2		TEL 5000	4/02/06	63	24.0	3.4	18.3
CITY CABIN	2390	4/01/06		14.2E	1.2	11.1		TEL 6110	4/01/06		54.2	34.3	60.0
CLOUDY PASS AM	6500	3/29/06	131	52.4		50.1	LOUP LOUP CAMPGRO	UND	3/29/06	44	15.5	1.2	
COLD CREEK STRIP	6020	3/27/06	51	14.0	5.5		LOWER SANDS CREEK		4/04/06	51	22.0	6.6	18.9
COLOCKUM PASS	5370	3/28/06	62	22.4	3.3	16.3	LUBRECHT FOREST N		3/26/06	16	4.6	.8	5.7
COMBINATION SNOTEL COPPER BOTTOM SNOTEL	5600 5200	4/01/06 4/01/06	12 19	4.1 6.2	2.6	4.9 11.0	LUBRECHT FOREST N LUBRECHT FOREST N		3/26/06 3/26/06	5 8	1.6 2.8	.0	1.3 1.6
COPPER CREEK	5700	3/25/06	26	8.5	.5	13.3	LUBRECHT HYDROPLO		3/28/06	18	5.6	.0	2.9
COPPER MOUNTAIN	7700	3/27/06	42	12.3	8.0	11.2	LUBRECHT SNOTEL	4680	4/01/06	14	3.3	. 0	3.6
CORRAL PASS SNOTEL	6000	4/01/06		38.5	12.6	34.9	LYMAN LAKE SNO	TEL 5900	4/01/06		65.9	30.8	65.4
COTTONWOOD CREEK	6400	3/28/06	25	7.2	4.8	8.3	LYNN LAKE	4000	3/20/06	72	29.9	5.3	20.4
COUGAR MTN. SNOTEL		4/01/06	61	22.0	1.5	17.7	MARIAS PASS	5250	3/29/06	45	15.7 80.7E	5.4	16.8 71.7
COX VALLEY COYOTE HILL	4500 4200	3/27/06 3/30/06	123 23	47.0 8.2	7.8 4.0	38.7 8.7	MARTEN LAKE MAZAMA	AM 3600	4/01/06 3/28/06	28	10.4	.0	71.7
DALY CREEK SNOTEL	5780	4/01/06	32	10.6	7.7	11.1		AN. 4200	3/31/06	23	7.1	3.2	6.1
DEER PARK	5200	4/01/06	49	16.7	2.3	18.8	MEADOWS CABIN	1900	3/31/06	0	.0	7.4	4.0
DESERT MOUNTAIN	5600	3/25/06	43	14.2	9.6	14.7		TEL 3240	4/01/06	84	39.9	4.4	23.9
DEVILS PARK	5900	3/31/06	99	28.2	17.8	44.2	MERRITT	2140	3/29/06	25 0	10.2 .0	.0	12.1
DISAUTEL PASS DISCOVERY BASIN	7050	3/28/06 3/27/06	27 33	8.2 9.0	5.8	10.4	METEOR M F NOOKSACK SNO	TEL 4980	3/30/06 4/01/06		55.8	21.8	
DIX BILL	6400	4/02/06	29	9.9	3.6	10.3		TEL 4750	4/01/06	61	22.6	9.4	25.1
DOMMERIE FLATS	2200	3/30/06	4	1.7	. 0	3.8	MINERAL CREEK	4000	4/01/06		18.2E	1.2	17.4
DUNCAN RIDGE	5370	3/27/06	36	9.7	1.1		MINERS RIDGE SNO		4/01/06	•••	53.4	25.6	53.0
DUNGENESS SNOTEL		4/01/06	42	11.4	.0			AN. 5080	4/02/06	24	7.2	3.5	9.5
EAST FORK R.S.	5400	3/27/06	19	5.3	1.0	4.7		AN. 5840	4/01/06	61	18.9 22.4	22.2 4.7	20.0 17.4
EL DORADO MINE ELBOW LAKE SNOTEL	7800 3200	3/26/06 4/01/06	45 97	13.0 45.6	11.3 7.1	20.2 39.2	MISSION RIDGE MONASHEE PASS C	5000 AN. 4500	3/27/06 3/26/06	33	11.2	3.7	13.5
EMERY CREEK	4350	3/25/06	43	15.0	9.1	39.2	MORRISSEY RIDGE O		4/01/06		29.7	20.7	27.8
EMERY CREEK SNOTEL	4350	4/01/06	37	14.1	7.1	15.3		TEL 5400	4/01/06	162	67.8	22.6	55.5
ENDERBY CAN.	5800	3/31/06	112	44.9	30.9	40.1	MOSES MOUNTAIN (2		3/29/06	59	21.3	5.4	22.7
ESPERON CK. MID CAN.	4250	4/01/06	46	16.0	9.5	14.6		TEL 4800	4/01/06	64	26.7	6.3	15.9
ESPERON CK. UP CAN.	5050	4/01/06	53	17.1	11.5	17.1	MOSES PEAK	6650	3/29/06	100	37.8 36.4	12.4 24.8	15.0 35.8
FARRON CAN. FATTY CREEK	4000 5500	3/30/06 3/31/06	43 66	15.0 26.3	10.4 14.8	12.5 24.3	MOSQUITO RDG SNC MOULTON RESERVOIR	TEL 5200 8 6850	4/01/06 3/27/06	34	8.4	24.0	6.9
PISB CREEK	8000	3/31/06	38	8.8	4.6	9.9		TEL 4050	4/01/06	112	35.2	13.9	30.8
FISH LAKE	3370	3/29/06	97	42.0	8.1	31.5		AN. 5500	4/01/06	54	17.1	8.0	12.5
FISH LAKE SNOTEL	3370	4/01/06	94	37.4	10.1	34.5	MOUNT TOLMAN	2000	3/31/06	0	.0	.0	
FLATTOP MTN SNOTEL	6300	4/01/06	128	47.9	31.0	45.1		TEL 3150	4/01/06	0	.0	2.0	13.0
FLEECER RIDGE FOURTH OF JULY SUM	7500	3/30/06	36	9.6	5.4	10.9	MOUNT GARDNER SNO MUTTON CREEK #1	TEL 2860 5700	4/01/06 3/24/06	51 76	20.5 24.3	2.0	13.0
FRED BURR PASS	3200 8000	3/31/06 3/27/06	24 66	8.9 23.1	.8 11.4	5.7 23.9	MUTTON CREEK #1 N.F. ELK CR SNOTE		4/01/06	40	11.4	7.6	12.4
FREEZEOUT CK. TRAIL	3500	4/02/06	40	13.8	4.8	11.3	NEVADA RIDGE SNOT		4/01/06	44	15.4	9.9	15.5

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	SNOW COURSE		EVATION	DATE	SNOW DEPTE	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
NEW HOZOMEEN LAKE	2800	3/31/06	27	9.2	.0	10.0	 SPENCER MDW	SNOTEL	3400	4/01/06		45.8	4.2	30.8
NEZ PERCE CMP SNO	TEL 5650	4/01/06	47	16.3	7.9	14.7	SPIRIT LAKE	SNOTEL	3100	4/01/06		11.9	1.6	
NEZ PERCE PASS	6570	3/28/06	47	15.9	6.5	17.8	SPOTTED BEAR	MTN.	7000	3/25/06	34	13.3	4.0	14.1
NOISY BASIN	6040	3/27/06	124	46.0	32.3		SPRUCE SPRING	S SNTL	5700	4/01/06	56	21.9	2.4	
NOISY BASIN SNOTE	6040	4/01/06	119	45.0	30.9	40.9	STARVATION MO	UNTAIN	6750	3/29/06	71	26.6	6.2	19.5
NORTH FORK JOCKO	6330	3/31/06	104	44.1	33.0		STABL PEAK SI	OTEL	6030	4/01/06	104	38.3	28.8	35.3
OLALLIE MDWS SNOT	TEL 3960	4/01/06	136	67.4	16.0	55.9	STAMPEDE PASS	SNOTEL	3860	4/01/06	118	48.7	9.1	45.3
OLALLIE MEADOWS	3630	4/01/06		46.7e	6.0	38.7	STEMPLE PASS		6600	3/31/06	33	9.1	4.6	10.2
OPHIR PARK	7150	4/02/06	46	15.4	7.4	16.7	STEVENS PASS	SNOTEL	4070	4/01/06	118	45.1	12.1	42.6
OYAMA LAKE CA	N. 4100	3/29/06	26	6.9	4.2	6.7	STEVENS PASS	SAND SD	3700	3/29/06	95	38.1	5.5	33.3
PALISADE CREEK	8250	3/30/06	86	34.4	12.8	29.8	STORM LAKE		7780	3/27/06	46	13.5	8.3	13.3
PARADISE PARK SNOT	TEL 5500	4/01/06		77.9	33.0	71.9	STRANGER MOUN	MIATN	4230	3/29/06	53	18.9	4.8	12.2
PARK CK RIDGE SNOT	TEL 4600	4/01/06	125	55.2	13.8	47.6	STRYKER BASIN	1	6180	3/29/06	95	36.9	21.7	31.9
PETERSON MDW SNOTE	3L 7200	4/01/06	36	9.3	5.9	10.5	STUART MOUNTA	IN	7400	3/31/06	89	35.8	21.8	
PIGTAIL PEAK SNOT	TEL 5900	4/01/06	159	58.9	20.4	53.2	SUMMERLAND RE	S CAN.	4200	3/31/06	30	9.5	4.6	8.9
PIKE CREEK	5930	3/29/06	66	25.4	12.9		SUMMIT G.S. #	2	4600	3/28/06	43	13.1	6.9	8.4
PIKE CREEK SNOTEL	5930	4/01/06	65	28.2	15.0	27.5	SUNSET	SNOTEL	5540	4/01/06		20.3	11.4	31.5
PIPESTONE PASS	7200	3/27/06	21	4.5	2.1	5.7	SURPRISE LKS	SNOTEL	4250	4/01/06		73.7	10.4	46.1
POPE RIDGE SNOT	EL 3540	4/01/06	66	23.3	7.1	18.4	SWAMP CREEK	SNOTEL	4000	4/01/06	39	17.3	1.6	
POSTILL LAKE CA	N. 4200	3/31/06	28	8.5	6.7	8.8	TEN MILE LOWE	R.	6600	3/30/06	27	7.0	3.7	7.0
POTATO HILL SNOT		4/01/06		35.7	2.6	25.3	TEN MILE MIDE		6800	3/30/06	39	11.2	6.1	11.4
QUARTZ PEAK SNOT		4/01/06	67	24.9	1.7	21.2	THUNDER BASIN		4200	4/01/06		33.2	13.9	33.7
RAGGED RIDGE	3330	3/31/06	16	6.4	. 0	4.1	THUNDER BASIN		4200	4/02/06	58	17.6	3.2	21.9
RAINY PASS SNOT	EL 4780	4/01/06	97	41.3	15.6	44.0	THOMPSON CREE	K	2500	3/31/06	0	. 0	. 0	
REX RIVER SNOT		4/01/06	94	45.3	7.2	31.2	TINKHAM CREEK		3000	4/01/06	85	34.7	6.7	30.0
ROCKER PEAK SNOTEL		4/01/06	52	14.6	9.1	14.3	TOATS COULEE		2850	3/27/06	12	3.4	.0	1.4
ROLAND SUMMIT	5120	4/01/06	87	38.0	17.1	36.4	TOUCHET	SNOTEL	5530	4/01/06	86	33.4	9.7	34.7
ROUND TOP MTN	4020	3/31/06	36	14.4	. 8		TRINKUS LAKE		6100	3/25/06	104	44.8	28.8	42.0
RUSTY CREEK	4000	3/24/06	38	11.7	.7	5.5	TROUGH #2	SNOTEL	5310	4/01/06	42	14.4	2.2	10.0
SADDLE MTN SNOTEL	7900	4/01/06	81	27.8	14.7	25.8	TROUT CREEK	CAN.	5650	3/28/06	27	7.8	4.2	7.2
SALMON MDWS SNOT	EL 4500	4/01/06	51	15.0	5.4	11.1	TRUMAN CREEK		4060	4/01/06		2.8E	1.1	3.7
SASSE RIDGE SNOT		4/01/06	109	41.0	14.3	37.3	TUNNEL AVENUE		2450	3/30/06	53	23.8	3.6	19.2
SATUS PASS	4030	3/30/06	49	19.6	. 2		TV MOUNTAIN		6800	3/31/06	53	19.1	11.8	18.5
SAVAGE PASS SNOT		4/01/06	70	26.4	15.1	26.5	TWELVEMILE SN	OTEL	5600	4/01/06	57	21.2	6.8	17.5
SAWMILL RIDGE	4700	3/20/06	83	32.8	7.0	33.5	TWIN CAMP		4100	3/20/06	62	25.2	3.0	24.1
	AM 3400	4/04/06	141	64.2	22.4	52.6	TWIN CREEKS		3580	3/25/06	27	9.0	. 0	9.6
SENTINEL BT SNOTEL	4920	4/01/06	38	11.3	5.1		TWIN LAKES SN	OTEL	6400	4/01/06	111	48.5	23.4	39.7
SHEEP CANYON SNOT		4/01/06	121	49.4	5.1	37.8	UPPER HOLLAND		6200	3/27/06	71	25.6	21.2	34.6
SHELL ROCK	4500	3/29/06	28	9.8			UPPER WHEELER		4400	4/01/06	45	18.3	7.3	13.1
SHERWIN SNOT		4/01/06		5.7	.0	10.1	VASEUX CREEK	CAN.	4250	3/29/06	18	4.4	1.6	6.2
SILVER STAR MTN CA		4/02/06	83	32.6	26.6	29.9	WARM SPRINGS		7800	4/01/06	71	21.6	12.4	21.2
SKALKAHO SNOTEL	7260	4/01/06	68	25.1	12.4	24.3	WATSON LAKES	AM	4500	4/01/06		70.2E		61.7
SKITWISH RIDGE	5110	4/04/06	82	34.0	9.1	30.2	WATERHOLE	SNOTEL	5000	4/01/06	108	39.6	7.9	
SKOOKUM CREEK SNOT		4/01/06	69	39.0	4.4	26.3	WEASEL DIVIDE		5450	3/28/06	91	33.8	23.1	32.9
SLIDE ROCK MOUNTAI		3/26/06	46	14.1	6.2	15.5	WELLS CREEK	SNOTEL	4200	4/01/06	98	39.8	15.1	32.2
SOURDOUGH GULCH SN		4/01/06	0	.0	.0		WHITE PASS ES		4500	4/01/06	140	27.3	4.1	23.9
		2, 22, 30	_				WHITE ROCKS M		7200	4/02/06	68	25.9	14.9	23.1

NRCS Natural Resources Conservation Service

March 1, 2006 -Snowpack, Precipitation and Reservoir Conditions at a Glance

(Water Year = October 1, 2005 - Current Date)





Natural Resources Conservation Service

Washington State Snow, Water and Climate Services

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Helpful Internet Addresses

NRCS Snow Survey and Climate Services Homepages

Washington:

http://www.wa.nrcs.usda.gov/snow

Oregon:

http://www.or.nrcs.usda.gov/snow

Idaho:

http://www.id.nrcs.usda.gov/snow

National Water and Climate Center (NWCC): http://www.wcc.nrcs.usda.gov

NWCC Anonymous FTP Server: ftp.wcc.nrcs.usda.gov

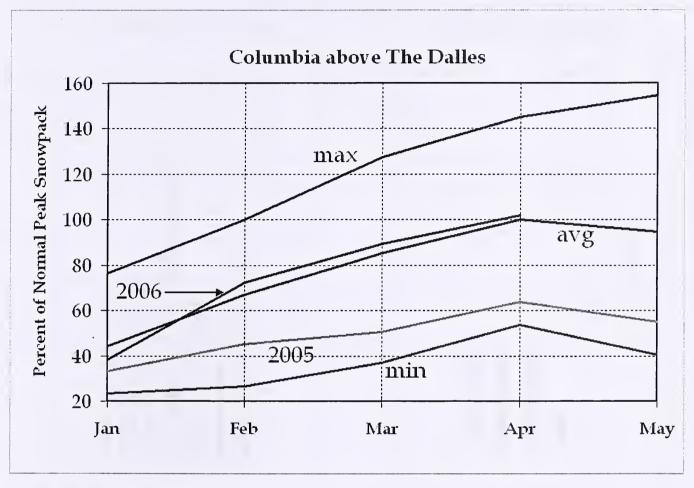
USDA-NRCS Agency Homepages

Washington:

http://www.wa.nrcs.usda.gov

NRCS National: http://www.nrcs.usda.gov

Columbia Basin Snowpack Summary



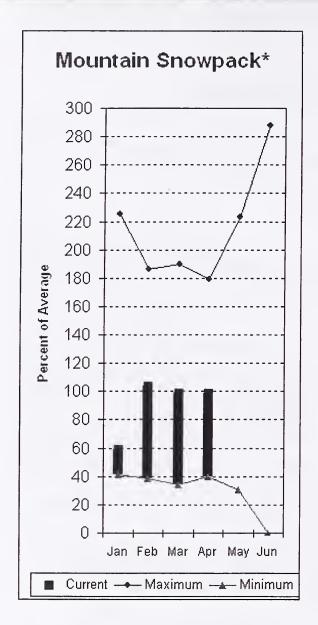
Snowpack conditions as of: April 1, 2006

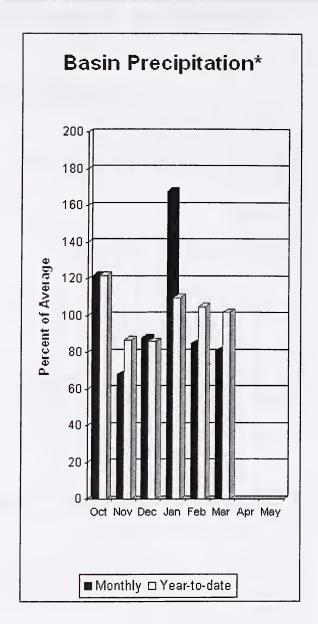
The Columbia Basin snowpack charts are produced with automated snow pillow data, collected by BC Hydro, Alberta Environment, and NRCS Snow Survey Program. These charts will now be available on the first of each month, January through May. Be aware that the data are provisional, until they are officially released by the responsible data collection agencies.

March precipitation was slightly below normal over the Columbia Basin. As a result, the overall snowpack above The Dalles is currently at 102 percent of average. This is down slightly from 105 percent on February 1. From a total basin standpoint, 2006 is turning out to be a normal snowpack year, with the combined snowpack peak at 102 percent of average. This is much better than last year at this time, when the snowpack was at a measly 64 percent of average. While most of the basin snowpack did not increase at normal levels, southern Idaho, and eastern Oregon snowpacks benefited from copious amounts of precipitation and cooler weather during March.

The snowpack in the Columbia Basin above Castlegar is at 92 percent of average. This compares to 73 percent last year and 98 percent of average last month. For the basin above Grand Coulee, the snowpack is at 95 percent of average. This compares to 69 percent last year and 100 percent of average last month. The Snake River snowpack above Ice Harbor is at 115 percent of average, compared to 61 percent last year and 113 percent of average last month.

Spokane River Basin





*Based on selected stations

The April 1 forecasts for summer runoff within the Spokane River Basin are 91% of average near Post Falls and 91% at Long Lake. The Chamokane River near Long Lake forecasted to have 106% of average flows for the May-August period. The forecast is based on a basin snowpack that is 99% of average and precipitation that is 102% of average for the water year. Precipitation for March was below normal at 81% of average. Streamflow on the Spokane River at Long Lake was 81% of average for March. April 1 storage in Coeur d'Alene Lake was 133,000acre feet, 78% of average and 56% of capacity. Snowpack at Quartz Peak SNOTEL site was 117% of average with 24.9 inches of water content. Average temperatures in the Spokane basin were slightly below normal for March and 1 degree above for the water year.

Spokane River Basin

SPC	KANE	RIVER	В	ASIN		
Streamflow	Forec	asts -	- 3	April	1,	2006

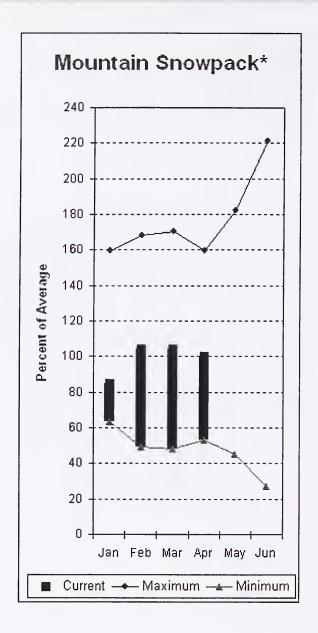
**=====================================	==========		==========					
		<<=====	Drier ====	== Future Co	onditions ==	===== Wetter	====>>	
Forecast Point	Forecast	=======		Chance Of E	xceeding * =		=======	
	Period	90%	70%	5	0%	3 0%	10%	30-Yr Avg.
	<u> </u>	(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
SPOKANE near Post Falls (2)	APR-SEP	1920	2210	2410	91	2610	2900	2650
SPORME Hear POST Paris (2)	APR-JUL	1850	2130	2320	91	2510	2790	2550
SPOKANE at Long Lake (2)	APR-JUL	2010	2350	2580	91	2810	3150	2850
	APR-SEP	2200	2560	2800	91	3040	3400	3070
CHAMOKANE CREEK near Long Lake	MAY-AUG	7.2	9.3	10.8	106	12.3	14.4	10.2

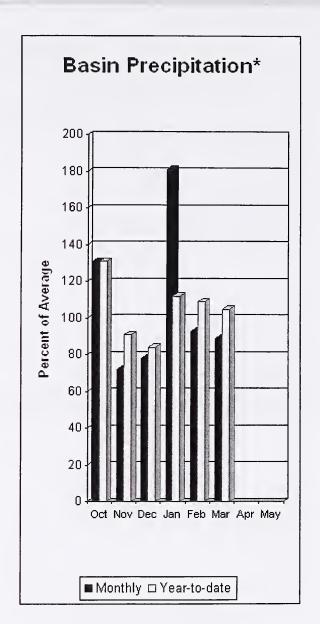
SPOKAN Reservoir Storage (1	SPOKANE RIVER BASIN Watershed Snowpack Analysis - April 1, 2006							
Reservoir	Usable Capacity	ge *** Avg	Number This Year a Watershed of ======== Data Sites Last Yr A					
COEUR D'ALENE	238.5	132.9	189.5	169.5	SPOKANE RIVER	16	239	99
					NEWMAN LAKE	2	1828	124

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

^{(1) -} The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Colville - Pend Oreille River Basins





*Based on selected stations

The April–September average forecast for the Kettle River streamflow is 94%, Colville at Kettle Falls is 120% and Priest River near the town of Priest River is 102%. March streamflow was 86% of average on the Pend Oreille River, 86% on the Columbia at Birchbank and 59% on the Kettle River. April 1 snow cover was 100% of average in the Pend Oreille Basin River Basin, 155% in the Colville and 108% for the Kettle River. Bunchgrass Meadows SNOTEL site had 34.5 inches of snow water on the snow pillow. Normally Bunchgrass would have 30.2 inches on April 1. Precipitation during March was 89% of average, bringing the year-to-date precipitation to 105% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 111% of normal. Average temperatures were slightly below normal for March and 1 degree above for the water year.

Colville - Pend Oreille River Basins

Streamflow Forecasts - April 1, 2006

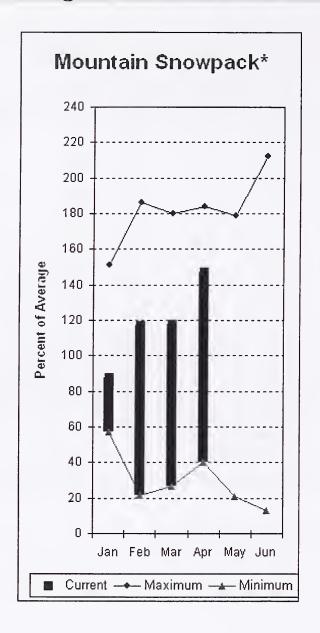
	5010		FOLECASC	s - whill				
		<<=====	Drier ====	== Future Co	onditions ==	===== Wetter	====>>	
Forecast Point	Forecast Period	90% (1000AF)	70% (1000AF)	(1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	 30-Yr Avg. (1000AF)
PEND OREILLE Lake Inflow (2)	APR-JUL	10450	11670	12500	98	13330	14550	12700
	APR-SEP	11360	12690	13600	98	14510	15840	13900
PRIEST near Priest River (1,2)	APR-JUL	705	795	835	103	875	970	815
	APR-SEP	670	820	890	102	955	1105	870
PEND OREILLE bl Box Canyon (2)	APR-JUL	10720	11840	12600	98	13360	14480	12900
	APR-SEP	11560	12890	13800	98	14710	16040	14100
COLVILLE at Kettle Falls	APR-SEP	133	154	169	120	184	205	141
	APR-JUL	122	142	155	121	168	188	128
KETTLE near Laurier	APR-SEP	1560	1730	1850	94	1970	2140	1970
	APR-JUL	1500	1650	1750	94	1850	2000	1870
COLUMBIA at Birchbank (1,2)	APR-JUL	29008	31891	33200	95	34510	37390	34900
	APR-SEP	36149	39760	41400	95	43040	46650	43500
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	52052	57930	60600	95	63270	69150	64000
	APR-JUL	43732	48661	50900	95	53140	58070	53800
COLVILLE - PEND (Reservoir Storage (100	00 AF) - End	of March	-======		Watershed Sn	PEND OREILLE Owpack Analys	is - April	1, 2006
Reservoir	Usable Capacity		e Storage ** Last Year Av	* Water		Numbe of Data Si	r This	Year as % of Hear as % of Yr Average

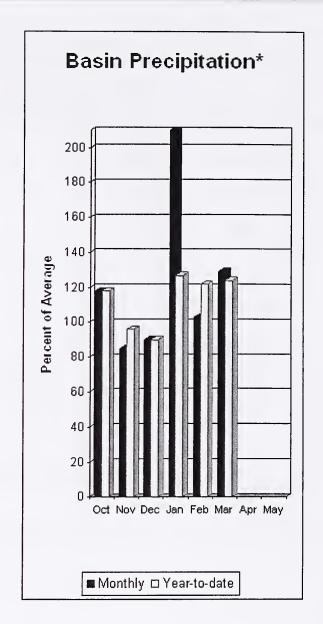
NO REPORT COLVILLE RIVER 1 313 ROOSEVELT 155 PEND OREILLE 1561.3 862.6 916.5 763.6 PEND OREILLE RIVER 199 119.3 54.2 59.9 65.5 KETTLE RIVER PRIEST LAKE 173

^{* 90%, 70%, 50%, 30%,} and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

^{(1) -} The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Okanogan - Methow River Basins





*Based on selected stations

Summer runoff average forecast for the Okanogan River is 87%, Similkameen River is 90%, Methow River is 89% and Salmon Creek is 117%. April 1 snow cover on the Okanogan was 111% of average, Omak Creek was 160% and the Methow was 116%. March precipitation in the Okanogan-Methow was 129% of average, with precipitation for the water year at 124% of average. March streamflow for the Methow River was 60% of average, 75% for the Okanogan River and 54% for the Similkameen. Snowwater content at Salmon Meadows SNOTEL was measured to be 15 inches. Average for this site is 11.1 inches on April 1. Combined storage in the Conconully Reservoirs was 13,000-acre feet, which is 72% of capacity and 54% of the April 1 average. Temperatures were near normal for March and 1 degree above for the water year.

Okanogan - Methow River Basins

Streamflow Forecasts - April 1, 2006

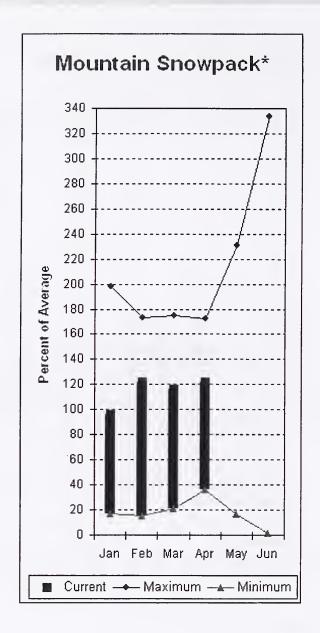
=======================================	========					=========	.========	
		<<=====	= Drier ====	== Future Co	nditions ==	==== Wetter	:====>>	
Forecast Point	Forecast	 =======		= Chance Of E	xceeding * =	==========		
	Period	90% (1000AF)	70% (1000AF)	(1000AF)	0% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SIMILKAMEEN near Nighthawk (1)	APR-JUL APR-SEP	900 940	1120 1200	========= 1220 1310	90	1320 1420	1540 1680	1350 1450
OKANOGAN near Tonasket (1)	APR-JUL	825	1210	1380	87	1550	1940	1580
	APR-SEP	980	1370	1540	87	1710	2100	1770
OKANOGAN at Malott (1)	APR-JUL	845	1240	1420	87	1600	2000	1635
	APR-SEP	1010	1410	1590	87	1770	2170	1826
Salmon Creek nr Conconully	APR-JUL	12.6	17.9	22	118	27	34	18.7
	APR-SEP	12.9	18.5	23	117	28	36	19.7
TOATS COULEE CREEK nr Loomis	APR-JUL	23	30	34	121	38	45	28
	APR-SEP	24	31	35	117	39	46	30
Beaver Creek blw SF nr Twisp	APR-SEP	10.0	12.6	14.3	118	16.0	18.6	12.1
	APR-JUL	9.1	11.6	13.3	120	15.0	17.5	11.1
METHOW RIVER near Pateros	APR-SEP	690	805	880	89	960	1070	985
	APR-JUL	705	770	810	89	850	915	910
OKANOGAN - Mi	ETHOW RIVER BA	 ASINS		 	OKANOGAJ	 N - METHOW RI	VER BASINS	=======================================

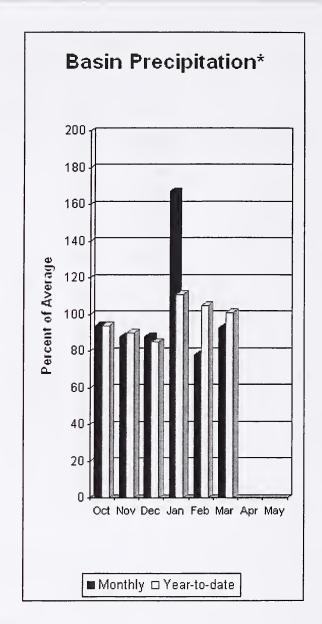
Reservoir Storage (1000	Watershed Snowpack Analysis - April 1, 2006							
Reservoir	Usable Capacity	*** Usable Storage *** This Last Year Year Avg		Watershed	Number of Data Sites		ar as % of ====== Average	
SALMON LAKE	10.5	7.6	6.3	8.4	OKANOGAN RIVER	23	186	111
CONCONULLY RESERVOIR	13.0	5.0	5.4	9.2	OMAK CREEK	3	356	160
					SANPOIL RIVER	0	782	0
					SIMILKAMEEN RIVER	5	244	84
					TOATS COULEE CREEK	1	391	243
					CONCONULLY LAKE	3	614	167
					METHOW RIVER	6	379	116

^{* 90%, 70%, 50%, 30%,} and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

^{(1) -} The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels. (2) - The value is natural volume - actual volume may be affected by upstream water management.

Wenatchee - Chelan River Basins





*Based on selected stations

Precipitation during March was 93% of average in the basin and 101% for the year-to-date. Runoff for Entiat River is forecast to be 102% of average for the summer. The April-September average forecast for Chelan River is 98%, Wenatchee River at Plain is 101%, Stehekin River is 95% and Stemilt Ck. near Wenatchee is 130%. Icicle and Squilchuck creeks are expected to have near average flows as well. March average streamflows on the Chelan River were 65% and on the Wenatchee River 50%. April 1 snowpack in the Wenatchee River Basin was 112% of average; the Chelan, 106%; the Entiat, 111%; Stemilt Creek, 140% and Colockum Creek, 140%. Reservoir storage in Lake Chelan was 138,000-acre feet, 64% of April 1 average and 20% of capacity. Lyman Lake SNOTEL had the most snow water with 65.9 inches of water. This site would normally have 65.4 inches on April 1. Temperatures were near normal for March and 1 degree above for the water year.

Wenatchee - Chelan River Basins

Streamflow Forecasts - April 1, 2006 _____ <<===== Drier ===== Future Conditions ====== Wetter ====>> ======= Chance Of Exceeding * ============== Period 90% 70% 50% 30% 10% 30-Yr Avg. (1000AF) (% AVG.) (1000AF) (1000AF) (1000AF) (1000AF) (1000AF) ______ ---------------CHELAN RIVER near Chelan APR-SEP STEHEKIN near STEHEKIN APR-SEP APR-JUL APR-SEP ENTIAT RIVER nr Ardenvoir APR-JUL WENATCHEE at Plain APR-SEP APR-JUL WENATCHEE R. at Peshastin APR-SEP APR-JUL STEMILT CK nr Wenatchee (miner's in) MAY-SEP ICICLE CREEK near Leavenworth APR-SEP APR-JUL COLUMBIA R. bl Rock Island Dam (2) APR-SEP APR-JUL WENATCHEE - CHELAN RIVER BASINS WENATCHEE - CHELAN RIVER BASINS Reservoir Storage (1000 AF) - End of March Watershed Snowpack Analysis - April 1, 2006 *** Usable Storage *** Number Last This of Year Year Avg Data Sites Last Yr Average CHELAN LAKE 137.9 467.6 216.3 CHELAN LAKE BASIN 676.1 ENTIAT RIVER WENATCHEE RIVER STEMILT CREEK

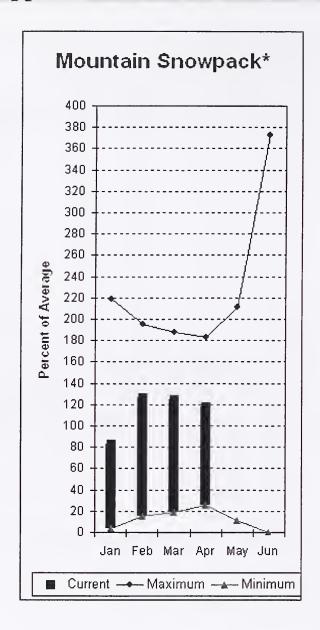
COLOCKUM CREEK

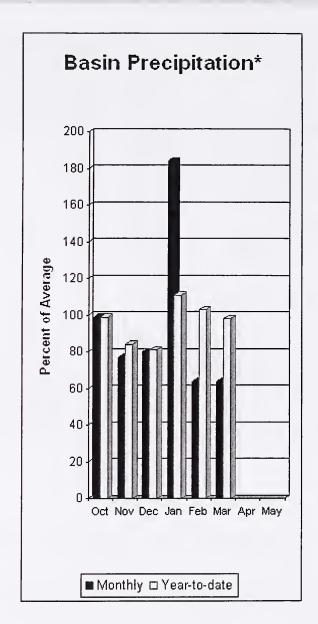
 $[\]star$ 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

^{(1) -} The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

^{(2) -} The value is natural volume - actual volume may be affected by upstream water management.

Upper Yakima River Basin





*Based on selected stations

April 1 reservoir storage for the Upper Yakima reservoirs was 284,000-acre feet, 51% of average. Forecasts for the Yakima River at Cle Elum are 109% of average and the Teanaway River near Cle Elum is at 118%. Lake inflows are all forecasted to be near that same range this summer. March streamflows within the basin were Yakima near Cle Elum at 43% and Cle Elum River near Roslyn at 39%. April 1 snowpack was 118% based upon 12 snow course and SNOTEL readings within the Upper Yakima Basin. Precipitation was only 64% of average for March and 98% for the water-year. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

Upper Yakima River Basin

Streamflow Forecasts - April 1, 2006

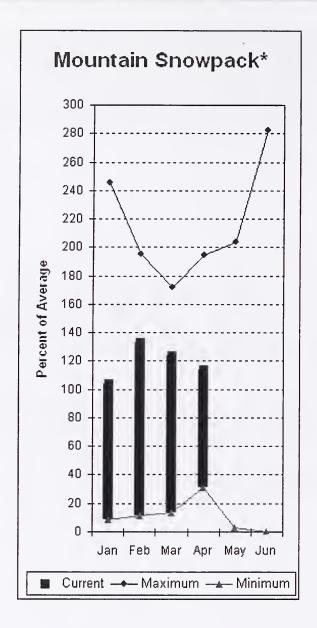
Beleding to the control of the contr											
	=======================================	<<===== 	Drier ====	== Future Co	onditions ==	===== Wetter	_====>>				
Forecast Point	Forecast	======	.=== = =====	- Chance Of E	Exceeding * =	:=========	=======				
	Period	90% (1000AF)	70% (1000AF)		0% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)			
KEECHELUS LAKE INFLOW	APR-JUL	116	126	133	110	140	150	121			
	APR-SEP	126	138	146	110	154	166	133			
KACHESS LAKE INFLOW	APR-JUL APR-SEP	108 116	116 125	121 131	109 109	126 137	134 146	111 120			
CLE ELUM LAKE INFLOW	APR-JUL APR-SEP	410 450	430 475	445 490	109 109	460 505	480 530	410 450			
YAKIMA at Cle Elum	APR-JUL APR-SEP	825 900	865 950	895 980	109 109	920 1010	970 1060	820 900			
TEANAWAY near Cle Elum	APR-JUL APR-SEP	149 136	161 157	169 172	118 118	177 187	189 210	143 146			
UPPER YAKIMA RIVER BASIN UPPER YAKIMA RIVER BASIN											

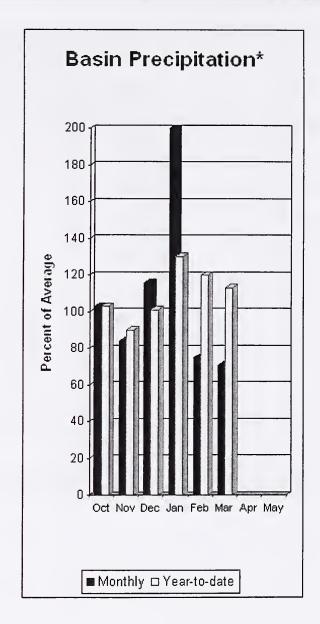
	UPPER YAKIMA RIVE Reservoir Storage (1000 AF)	UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - April 1, 2006							
Reservoir		ble city	*** Usah This Year	ole Stora Last Year	.ge *** , Avg	Watershed	Number of Data Sites		r as % of Average
KEECHELUS	15	7.8	68.6	107.6	114.1	UPPER YAKIMA RIVE	ER 12	478	118
KACHESS	23	9.0	91.8	140.5	169.4				
CLE ELUM	43	6.9	123.5	293.3	270.1				

^{* 90%, 70%, 50%, 30%,} and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

⁽¹⁾ - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels. (2) - The value is natural volume - actual volume may be affected by upstream water management.

Lower Yakima River Basin





*Based on selected stations

March average streamflows within the basin were: Yakima River near Parker, 50%; Naches River near Naches, 49%; and Yakima River at Kiona, 50%. April 1 reservoir storage for Bumping and Rimrock reservoirs was 151,000-acre feet, 100% of average. Forecast averages for Yakima River near Parker are 114%; American River near Nile, 109%; Ahtanum Creek, 100%; and Klickitat River near Glenwood, 120%. April 1 snowpack was 114% based upon 9 snow course and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 139% of average. Precipitation was 71% of average for March and 113% year-to-date for water. Temperatures were 1 degree below normal for March and near average for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they April differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

Lower Yakima River Basin

______ Streamflow Forecasts - April 1, 2006

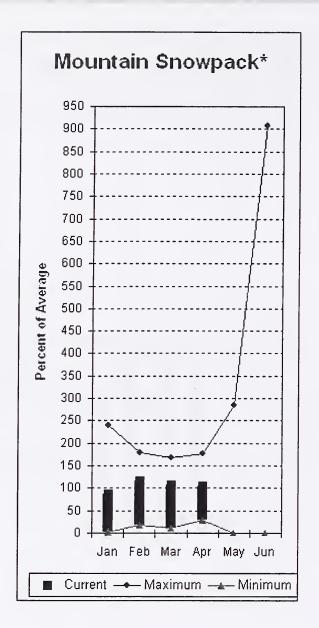
		========			========	=========	+=======	=======================================
		<<=====	Drier ====	== Future Co	nditions =:	===== Wetter	====>>	
Forecast Point	Forecast Period	90%	70%		xceeding * :	======================================	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
BUMPING LAKE INFLOW	APR-SEP	135	143	148	112	153	161	132
	APR-JUL	125	132	137	112	142	149	122
AMERICAN RIVER near Nile	APR-SEP	116	123	128	109	133	140	118
	APR-JUL	105	112	117	108	122	129	108
RIMROCK LAKE INFLOW	APR-SEP	235	250	260	108	270	285	240
	APR-JUL	200	210	220	107	230	240	205
NACHES near Naches	APR-SEP	835	880	910	109	940	985	835
	APR-JUL	760	800	830	109	860	900	760
AHTANUM CREEK at Union Gap	APR-SEP	24	29	32	100	35	40	32
	APR-JUL	23	27	30	100	33	37	30
YAKIMA near Parker	APR-SEP	2020	2120	2190	114	2260	2360	1920
	APR-JUL	1820	1910	1970	114	2030	2120	1730
KLICKITAT near Glenwood	APR-JUN	145	154	160	124	166	175	129
	APR-SEP	173	186	195	120	204	217	163
=======================================				========		 		=======================================
LOWER Y		LOWER YAKIMA RIVER BASIN						

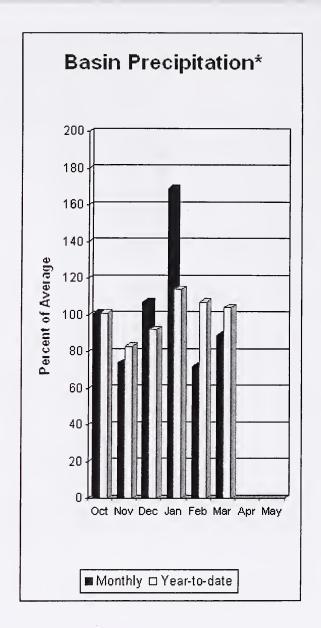
LOWER YAKIMA Reservoir Storage (1000		LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - April 1, 2006					
Reservoir	Usable Capacity	*** Usah This Year	le Stora Last Year	ge *** Avg	Watershed	Number of Data Sites	This Year as % of ======= Last Yr Average
BUMPING LAKE	33.7	19.4	29.6	13.1			
RIMROCK	198.0	131.5	166.9	138.5			

^{* 90%, 70%, 50%, 30%,} and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

^{(1) -} The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Walla Walla River Basin





*Based on selected stations

March precipitation was 89% of average, maintaining the year-to-date precipitation at 104% of average. Snowpack in the basin was 105% of average. Streamflow forecasts are 111% of average for Mill Creek and 110% for the SF Walla Walla near Milton-Freewater. March streamflow was 88% of average for the Walla Walla River. Average temperatures were 1 degree below normal for March and 1 degree above average for the water year.

Special note: There has been a change in the streamflow forecast point location on Mill Creek. It has been moved from being near Walla Walla upstream to Kooskooskie where there is an active real-time USGS stream gage. This should improve the accuracy and usefulness of the forecast and has already shown a much better correlation with historic streamflows. There will also be a new SNOTEL site and manual snow course installed in the Mill Creek Basin this summer, which will generously help to forecast accuracy.

For more information contact your local Natural Resources Conservation Service office.

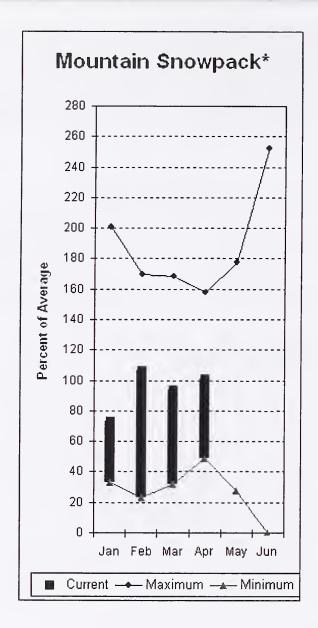
Walla Walla River Basin

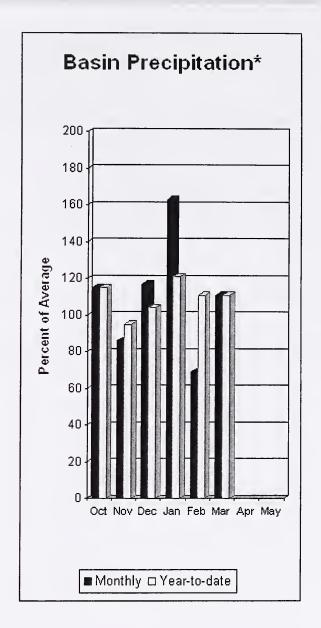
	Ctro	======================================	Foregast		 7nril	1, 2006	.========	=========	
***************************************	3016						*=======		
		<<=====	= Drier ====:	== F	uture Co	onditions ==	===== Wette	r ====>>	
Forecast Point Forecast ====================================							į		
	Period	90%	70%	! .	-	50%	30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
SF WALLA WALLA near Milton-Freewat	ter APR-,TIII.	53	58		61	113	64	69	54
bi milli milli nedi niitedi iteewa	APR-SEP	65	70	i	74	110	78	83	67
				i					
MILL CREEK at Kooskooskie	APR-JUL	20	24	İ	27	113	30	35	24
	APR-SEP	24	28	ļ	31	111	34	39	28
				l		l			
וווע מזומע	LLA RIVER BASI	======== FN		====: 	======		LA WALLA RIV	EEEEEEEEE	==========
Reservoir Storage (10				- 1			owpack Analy		1 2006
**************************************	======================================	errerrer.	.=======	:	=======	==========	=========	======================================	=======================================
	Usable	*** Usabl	e Storage *	**			Numb	er This	Year as % of
Reservoir	Capacity	This	Last	ļ	Water	shed	of		=======================================
		Year	Year A	vg			Data S	ites Last	Yr Average
				==== :	======= A I I A II	WALLA RIVER	2	358	105
				Į	WALLE	WALLA KIVER	. 2	358	105
				ı					

^{* 90%, 70%, 50%, 30%,} and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

- (1) The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels. (2) The value is natural volume actual volume may be affected by upstream water management.

Lower Snake River Basin





*Based on selected stations

The April-September forecast is for 103% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 117% and 108% of normal respectively. March precipitation was 111% of average, maintaining the year-to-date precipitation at 111% of average. April 1 snowpack readings averaged 101% of normal. March streamflow was 87% of average for Snake River below Lower Granite Dam and 67% for Grande Ronde River near Troy. Average temperatures were normal for March and 1 degree above normal for the water year.

Lower Snake River Basin

Streamflow Forecasts - April 1, 2006

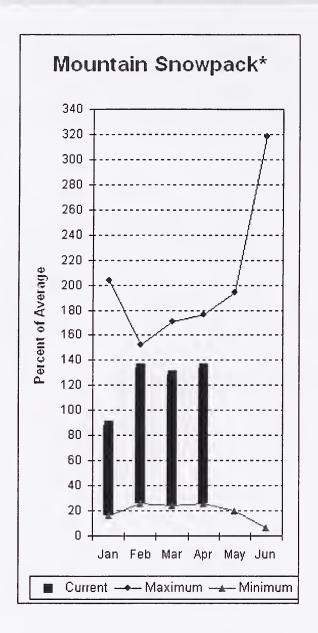
Forecast Point	Forecast		Drier ====	== Future Co = Chance Of E		===== Wetter	====>>			
	Period	90% (1000AF)	70% (1000AF)		50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)		
GRANDE RONDE at Troy (1)	APR-JUL	1129	1363	1470	116	1577	1810	1270		
	APR-SEP	1202	1455	1570	115	1685	1940	1370		
CLEARWATER at Spalding (1,2)	APR-JUL	5910	7130	7690	104	8250	9470	7430		
	APR-SEP	6320	7540	8100	103	8660	9880	7850		
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	20584	23965	25500	118	27040	30420	21600		
	APR-SEP	22775	26574	28300	117	30030	33830	24100		

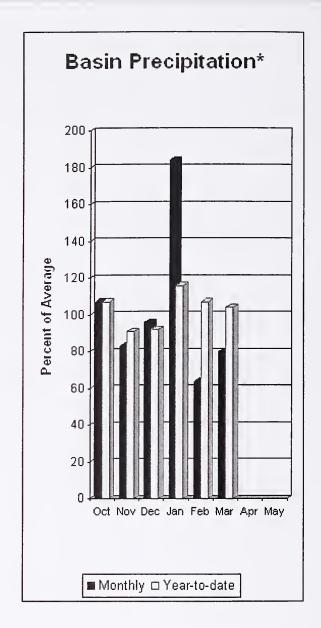
LOWER SNA Reservoir Storage (10	LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - April 1, 2006							
Reservoir	Usable Capacity		able Stora Last Year	age *** Avg	Watershed	Number of Data Sites	This Year ======= Last Yr	
DWORSHAK	3468.0	2401.9	3083.6	2205.4	LOWER SNAKE, GRANDE	RONDE 17	213	101

_______ * 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

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Cowlitz - Lewis River Basins





*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 114% and Cowlitz River at Castle Rock, 112% of average. The Columbia at The Dalles is forecasted to have 100% of average flows this summer. March average streamflow for Cowlitz River was 58% and 62% for Lewis River. The Columbia River at The Dalles was 84% of average. March precipitation was 80% of average and the water-year average was 104%. June Lake SNOTEL received 16 inches of precipitation in March, normal is 19.36 inches. April 1 snow cover for Cowlitz River was 111%, and Lewis River was 158% of average. Average temperatures were near normal during March and 1 degree above for the water year.

Cowlitz - Lewis River Basins

Streamflow Forecasts - April 1, 2006

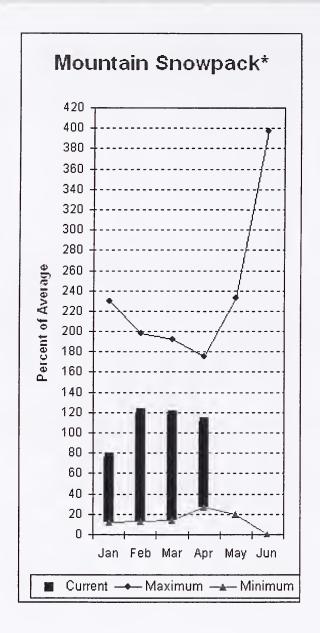
		<<=====	Drier ====	== Future Co	nditions ==	===== Wette	: ====>>	
Forecast Point	Forecast		-========	= Chance Of E	xceeding * =			
	Period	90% (1000AF)	70% (1000AF)	(1000AF)	0% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
LEWIS at Ariel (2)	APR-JUL	933	1098	1210	117	1322	1487	1031
	APR-SEP	1056	1225	1340	114	1455	1624	1176
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	1298	1817	2170	113	2523	3042	1922
	APR-JUL	1036	1556	1910	113	2264	2784	1689
COWLITZ R. at Castle Rock (2)	APR-SEP	1742	2461] 2950	112	3439	4158	2639
	APR-JUL	1733	2231	2570	112	2909	3407	2295
CLICKITAT near Glenwood	APR-JUN	145	154	160	124	166	175	129
	APR-SEP	173	186	195	120	204	217	163
COLUMBIA R. at The Dalles (2)	APR-SEP	87808	94055	98300	100	102540	108790	98600
	APR-JUL	73063	79754	84300	100	88850	95540	84600
=======================================			.=======	 =========	 	========		
COWLITZ - LEWIS RIVER BASINS Reservoir Storage (1000 AF) - End of March						Z - LEWIS RIV		1 20

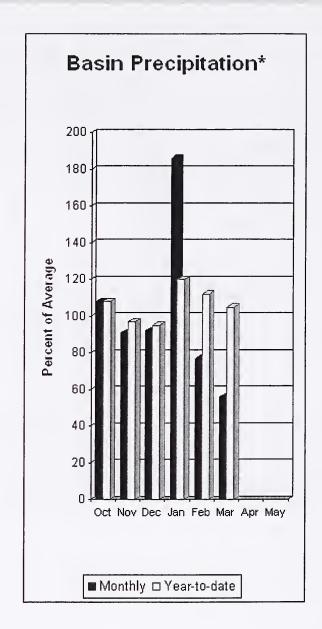
COWLITZ - I Reservoir Storage (COWLITZ - LEWIS RIVER BASINS Watershed Snowpack Analysis - April 1, 2006							
Reservoir	Usable Capacity	*** Usa This Year	able Storag Last Year	ge ***	Watershed	Number of Data Sites		ar as % of Average
MOSSYROCK	0.0	1142.1	1271.4		LEWIS RIVER	5	746	158
SWIFT	0.0	553.3	722.8		COWLITZ RIVER	6	328	111
YALE	0.0	355.9	312.5					
MERWIN	0.0	408.4	419.4					
+======================================								

^{* 90%, 70%, 50%, 30%,} and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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White - Green River Basins





*Based on selected stations

Summer runoff is forecast to be 108% of normal for the Green River below Howard Hanson Dam and 108% for the White River near Buckley. April 1 snowpack was 106% of average in both White River and Puyallup River basins and 116% in Green River Basin. Water content on April 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 38.5 inches. This site has an April 1 average of 34.9 inches. March precipitation was 56% of average, dropping the water year-to-date to 105% of average for the basins. Average temperatures in the area were near normal for March and 1 degree above for the water-year.

White - Green - Puyallup River Basins

Streamflow Forecasts - April 1 2006

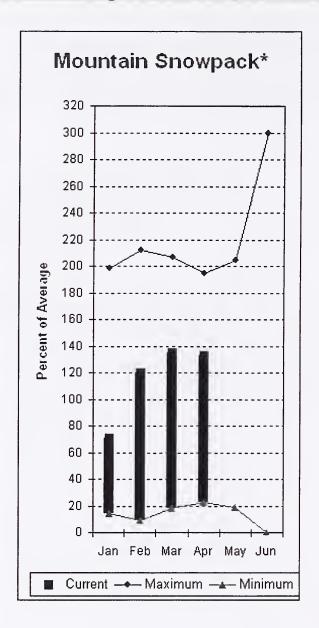
Streaminow Polecasts - April 1, 2000											
Forecast Point	Forecast			== Future Co		===== Wetter					
rolecast formt	Period	90% (1000AF)	70% (1000AF)		0% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)			
WHITE near Buckley (1,2)	APR-JUL APR-SEP	399 487	451 548	475 575	108	499 602	551 663	440 534			
GREEN R below Howard Hansen (1,2)	APR-JUL APR-SEP	218 237	250 274	265 290	109 108	280 306	312 343	243 268			

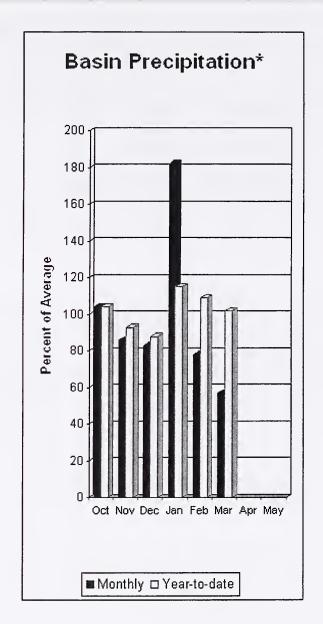
WHITE - GREEN - Reservoir Storage (1	 		WHITE - GREEN - PUYALLUP RIVER BASINS Watershed Snowpack Analysis - April 1, 2006					
Reservoir	Watershed	Number of Data Sites	This Year					
	 =======================================	=======	:=====	WHITE RIVER	3	255	106	
				GREEN RIVER	7	749	116	
				PUYALLUP RIVER	3	275	106	

^{* 90%, 70%, 50%, 30%,} and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

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Central Puget Sound River Basins





*Based on selected stations

Forecast for spring and summer flows are: 113% for Cedar River near Cedar Falls; 111% for Rex River; 107% for South Fork of the Tolt River; and 115% for Cedar River at Cedar Falls. Basin-wide precipitation for March was 57% of average, bringing water-year-to-date to 102% of average. April 1 average snow cover in Cedar River Basin was 142%, Tolt River Basin was 140%, Snoqualmie River Basin was 127%, and Skykomish River Basin was 124%. Olallie Meadows SNOTEL site, at 3960 feet, had 67.4 inches of water content. Average April 1 water content is 55.9 inches at Olallie Meadows. Temperatures were near average for March and for the water-year.

Central Puget Sound River Basins

Streamflow Forecasts - April 1, 2006

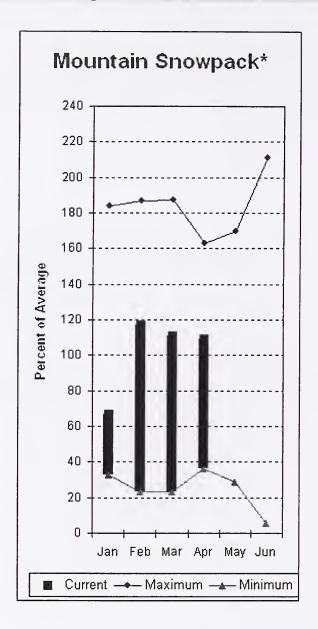
		<<=====	Drier ====	== Future Co	onditions ==	===== Wetter	====>>			
Forecast Point	Forecast			= Chance Of 1	Exceeding * =		======			
	Period	90%	70%		50%	30%	10%	30-Yr Avg.		
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)		
			.========			=========	=======			
CEDAR near Cedar Falls	APR-JUL	68	76	82	112	88	96	73		
	APR-SEP	75	84	j 90	113	96	106	80		
				ĺ						
REX near Cedar Falls	APR-JUL	21	25	28	112	31	35	25		
•	APR-SEP	24	28	31	111	34	38	28		
CEDAR RIVER at Cedar Falls	APR-JUL	62	74	83	112	92	104	74		
	APR-SEP	65	76	84	115	92	103	73		
SOUTH FORK TOLT near Index	APR-JUL	13.1	14.5	15.5	105	16.5	17.9	14.7		
	APR-SEP	14.9	16.8	18.0	107	19.2	21	16.9		
***************************************			.=========							

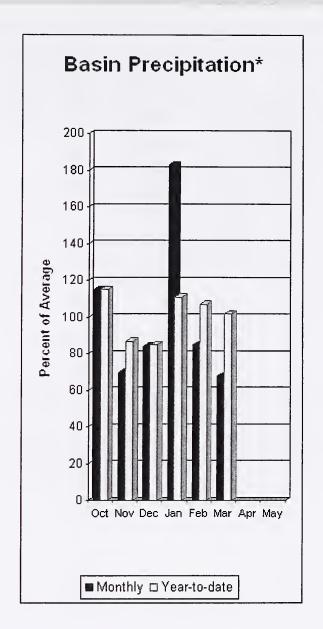
CENTRAL PUGE Reservoir Storage (CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - April 1, 2006							
Reservoir	Usable *** Usable Storage *** Capacity This Last Year Year Avg				Watershed	Number of Data Sites		r as % of Average
				======	CEDAR RIVER	5	719	142
					TOLT RIVER	3	433	140
					SNOQUALMIE RIVER	6	474	127
					SKYKOMISH RIVER	4	406	124
							.======	

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

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(2) - The value is natural volume - actual volume may be affected by upstream water management.

North Puget Sound River Basins





*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 100% of average for the spring and summer period. March streamflow in Skagit River was 57% of average. Other forecast points included Baker River at 105% and Thunder Creek at 99% of average. Basin-wide precipitation for March was 68% of average, bringing water-year-to-date down to 102% of average. April 1 average snow cover in Skagit River Basin was 92% and Nooksack River Basin was 120%. Baker River Basin snow surveys showed above average conditions. Rainy Pass SNOTEL, at 4,780 feet, had 41.3 inches of water content. Average April 1 water content is 44 inches at Rainy Pass. In preparation for spring runoff, April 1 Skagit River reservoir storage was down to 69% of average and 34% of capacity. Average temperatures for March were near normal for the basin and 1 degree above average for the water year.

North Puget Sound River Basins

Streamflow Forecasts - April 1, 2006

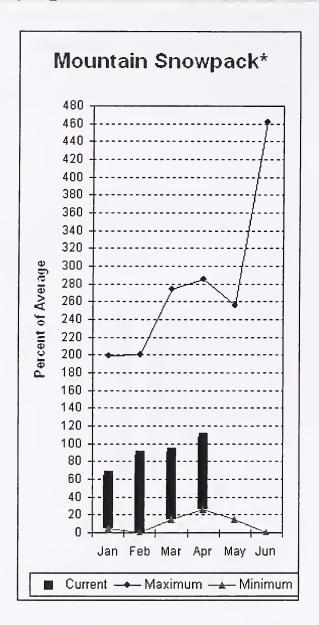
				======================================		======================================	=====>>	***========
Forecast Point	Forecast Period	<<===== 90%	30-Yr Avg.					
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
THUNDER CREEK near Newhalem	APR-JUL	203	219	230	98	241	257	234
	APR-SEP	301	318	330	99	342	359	333
SKAGIT at Newhalem (2)	APR-JUL	1764	1869	1940	104	2011	2116	1864
	APR-SEP	2010	2135	2220	100	2305	2430	2217
BAKER RIVER near Concrete	APR-JUL	785	844	885	107	926	985	828
	APR-SEP	977	1050	1100	105	1150	1223	1050

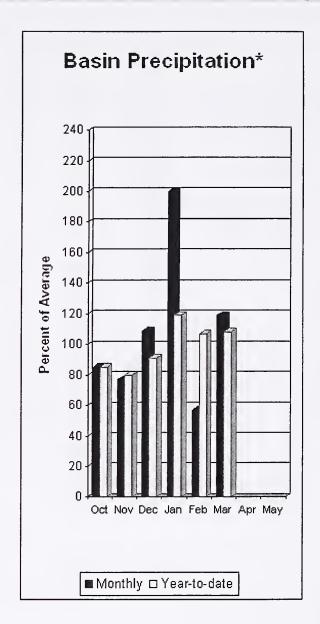
NORTH PUGET SO Reservoir Storage (100	NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - April 1, 2006							
Reservoir	Usable Capacity	*** Usa This Year	able Stora Last Year	ge ***	Watershed	Number of Data Sites		r as % of ====== Average
ROSS	1404.1	480.2	1073.8	693.0	SKAGIT RIVER	13	285	92
DIABLO RESERVOIR		NO REPO	ORT		BAKER RIVER	3	287	116
					NOOKSACK RIVER	2	321	120

^{* 90%, 70%, 50%, 30%,} and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

- (1) The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) The value is natural volume actual volume may be affected by upstream water management.

Olympic Peninsula River Basins





*Based on selected stations

Forecasted average runoff for streamflow for both the Dungeness and Elwha rivers is 102% and 104% respectively. March runoff in the Dungeness River was 64% of normal. Big Quilcene and Wynoochee rivers should expect near average runoff this summer as well. March precipitation was 119% of average. Precipitation has accumulated at 108% of average for the water year. March precipitation at Quillayute was 8.92 inches. The thirty-year average for March is 10.98 inches. Olympic Peninsula snowpack averaged 107% of normal. Mt Crag SNOTEL reported 112 inches of snow depth with 35.2 inches of water content. Normal April 1 snow-water-content at Mt. Crag is 30.8 inches. Temperatures were slightly below average for March and 1 degree above average for the water year.

Olympic Peninsula River Basins

Streamflow Forecasts - April 1, 2006

		<<=====	Drier ====	== Future Co	onditions =	===== Wetter	====>>	
Forecast Point	Forecast			= Chance Of E	xceeding *		======	
	Period	90%	70%	1 5	50%	30%	10%	30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	(1000AF)
=======================================		========			========		==========	
DUNGENESS near Sequim	APR-SEP	137	148	155	102	162	173	152
•	APR-JUL	115	124	130	105	136	145	124
ELWHA near Port Angeles	APR-SEP	464	500	525	104	550	586	503
bbillar float fort falgores	APR-JUL	382	414	435	104	456	488	419
				l 		l 		

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of March						OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - April 1, 2006			
Reservoir	(Usable Capacity	*** Usable Storage *** This Last Year Year Avg			Watershed	Number of Data Sites	This Yea ====== Last Yr	r as % of ======= Average
						OLYMPIC PENINSULA	4	475	107

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the

- (1) The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) The value is natural volume actual volume may be affected by upstream water management.



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The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work*:

Canada Ministry of Sustainable Resources

Snow Survey, River Forecast Centre, Victoria, British Columbia

State Washington State Department of Ecology

Washington State Department of Natural Resources

Federal Department of the Army

Corps of Engineers

U.S. Department of Agriculture

Forest Service

U.S. Department of Commerce

NOAA, National Weather Service

U.S. Department of Interior

Bonneville Power Administration

Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs

Local City of Tacoma

City of Seattle

Chelan County P.U.D.

Pacific Power and Light Company

Puget Sound Power and Light Company Washington Water Power Company

Snohomish County P.U.D. Colville Confederated Tribes

Spokane County
Yakama Indian Nation
Whatcom County

Pierce County

Private Okanogan Irrigation District

Wenatchee Heights Irrigation District Newman Lake Homeowners Association

Whitestone Reclamation District



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